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| 09/720,149 | 12/21/2000 | Piet S. Wauters | PHN17.577 | 7538 |

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| EXAMINER |
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CHEN, TSE W

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| ART UNIT | PAPER NUMBER |
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2116

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DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/720,149

Applicant(s)

WAUTERS ET AL.

Examiner

Tse Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment A dated March 15, 2004.
2. Claims 1-12 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Re Claims 1, 5, and 8-9

4. The following are fact findings for claim 1, 5, and 8-9:
 - 4.1. Endo, U.S. Patent 6363491, discloses a device [USB apparatus 30-32] for use in a data bus system [USB].
 - 4.2. The bus system comprises a host station [Personal Computer 10], a bus cable and the device coupled to the host station via the bus cable [FIG.2; col.1, ll.65-66; USB Ports 20a at host and devices are coupled via bus cables].
 - 4.3. The bus cable comprising a data transfer conductor and power supply conductors for enabling the device to obtain operating power from the bus system via the bus cable [col.1, l.65 to col.2, l.3].
 - 4.4. The device comprises a connector [USB Port 20a] for coupling the device to the bus cable and a control circuit [amplification circuit 20b] coupled to the connector.

4.5. The control circuit is arranged to detect whether a power supply is connected to the power supply conductors [col.3, ll.29-31; col.5, ll.20-21].

4.6. The control circuit is arranged to start waiting in a slave mode for commands received via the data transfer conductor when connection of the power supply has been detected [col.3, ll.57-67; col.1, l.35, USB apparatuses such as printers or speakers inherently act as slaves for receiving and executing host commands].

4.7. The control circuit switches from one mode to another mode and/or vice versa when absence or presence of power supply is detected [col.3, l.39 to col.4, l.5; the circuit detects repeatedly whether a power supply is connected and switches modes accordingly].

4.8. Endo discloses a USB apparatus comprising a controller [amplification circuit 20b] that is configured to determine whether power is being provided to the apparatus via a USB bus [col.3, ll.29-31; col.5, ll.20-21].

4.9. Endo discloses the controller placing the USB apparatus in a slave mode wherein the function is performed in dependence upon communications received via the USB bus if the power is being provided to the apparatus via the USB bus [col.3, ll.57-67; col.1, l.35].

4.10. 2findit, Internet message ID<0del2.1054\$MI3.1661@news15.ispnews.com>#1/1, discloses a device [ACS495 speaker] for use in a bus system [USB].

4.11. The device disclosed by 2findit comprises control circuit [inherently, a control circuit is needed for device operations] arranged to start waiting in a slave mode for commands received via the data transfer conductor [control of volume, balance, etc. from PC] or to start operating in a stand-alone mode [channel selectors and rotary wheel], dependent on whether

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or not connection of the power supply [USB cable] has been detected respectively [Standalone Mode Topic Header Section].

4.12. 2findit discloses a USB apparatus [ACS495 speaker] that is configured to provide at least one function [control of volume] that is independent of providing USB functionality [Standalone Mode Topic Header Section; when the host computer is off, USB functionality, such as a command to turn up the volume of a USB apparatus speaker, is absent].

4.13. 2findit discloses the controller placing the USB apparatus in a stand-alone mode [channel selectors and rotary wheel] wherein the function is performed independent of communications received via the USB bus if the power is not being provided to the apparatus via the USB bus [Standalone Mode Topic Header Section].

5. Claims 1, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of 2findit.

6. In re claim 1, Endo discloses each and every limitation of the claim, as set forth in findings 4.1-4.6, except for operating in a stand-alone mode if no connection of the bus power supply has been detected. 2findit teaches a device operable in a stand-alone mode if the bus power supply is not detected [findings 4.7-4.8] in order to provide a way to continue local device operations [controlling volume in a speaker] in the event of a disconnection [e.g., accidental] of the bus-powered cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the control circuit taught by 2findit in the device disclosed by Endo. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to continue local device operations even with the disconnection of the bus-powered cable.

7. As to claim 5, see findings 4.5 and 4.7.

8. As to claim 8, see finding 4.1.

9. As to claim 9, Endo discloses each and every limitation of the claim, as set forth in findings 4.8-4.9, except for operating in a stand-alone mode if no connection of the bus power supply has been detected [functioning independently of providing USB functionality]. 2findit teaches a USB apparatus operable in a stand-alone mode if the bus power supply is not detected [findings 4.12-4.13] in order to provide a way to continue local USB apparatus operations [controlling volume in a speaker] even with no power being provided to the apparatus via the USB bus [accidental disconnection of the USB cable or bad cable itself]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the control circuit taught by 2findit in the USB apparatus disclosed by Endo. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to continue local USB apparatus operations even with no power being provided to the apparatus via the USB bus.

Re Claims 2, 6, and 10-12

10. The following are fact findings for claims 2, 6, and 10-12:

10.1. Tsai discloses a device [USB device 22] wherein the bus system [USB] comprises a pull circuit [Pull-up Circuit 31] for pulling a potential of the data transfer conductor [data line D-] away from a potential of a first one of the power supply conductors [col.5, ll.15-26; pulling the potential from GND to V2].

10.2. Tsai discloses the bus system [USB] being arranged to detect whether or not the potential of the data transfer conductor [D-] is pulled back to the potential of the first one of the power supply conductors via the bus cable, so as to determine whether the device is

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connected to the bus cable [col.1, ll.58-62; col.4, ll.50-52; col.5, ll.11-14; the signal S1 is sent along D- to indicate plugged/unplugged state of the device].

10.3. Tsai discloses the device comprises a pull back circuit [Pull-up Circuit 31] for pulling back the potential of the data transfer conductor to the potential of the first one of the power supply conductors [col.6, ll.14-16, ll.40-43; the inhibit signal causes the pull-up circuit 31 to pull back the potential of D- to GND, resulting in the unplugging action].

10.4. Tsai discloses the control circuit [resume control unit 27] enabling and disabling the pull back circuit [col.6, ll.9-19].

10.5. Tsai discloses the USB apparatus [USB device 22] wherein the controller [resume control unit 27] is configured to provide one or more signals [S1] to the USB bus to indicate a disconnection [unplugged] of the apparatus from the USB bus when the controller determines that power is not being provided via the USB bus [col.4, ll.38-54; a power interruption analogous to a brief disconnection would trigger the EMS detection unit 26].

10.6. Tsai discloses the controller is configured to provide one or more signals [S1] to the USB bus to indicate a connection [plugged] of the apparatus from the USB bus when the controller determines that power is subsequently being provided via the USB bus [col.4, ll.38-54; S1 signal would indicate plugged status under normal operation which is assumed after a simulated disconnection].

10.7. Tsai discloses the controller is configured to delay [watchdog timer 42 preset time] providing the one or more signals to the USB bus to indicate a connection of the apparatus to the USB bus [col.5, ll.43-56; the preset time has to elapse without timer 42 being reset to zero due to the likes of a power disconnection before S1 will be sent].

10.8. Endo discloses enabling and disabling the pull circuit [internal circuits should comprise pull circuit as simple as a resistive element to indicate whether attached device is full or low speed]¹ operating in the slave mode and the stand-alone mode respectively [col.4, 1.57 to col.5, 1.15; the detection of power on bus enables or disables the reference voltage to be outputted to the internal circuits].

10.9. Endo discloses the controller is configured to detect whether power is subsequently provided to the apparatus after determining that power is not being provided via the USB bus [col.3, 11.29-31; col.5, 11.20-21; col.3, 1.3 to col.4, 1.6; continuous monitoring].

11. Claims 2, 6 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo and 2findit, as applied to claim 1 above, and further in view of Tsai.

12. In re claims 2 and 6, Endo discloses each and every limitation of the claims, as set forth in finding 10.8, except for the details of the pull circuit. Tsai teaches a device with a pull circuit for pulling up or back the potential of the data transfer conductor based on a control circuit [findings 10.1-10.4] to provide real-time information about the state of the bus connection to the host. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the circuits taught by Tsai in the device disclosed by Endo. One of ordinary skill in the art would have been motivated to make such a combination as it provides real-time information that would be of value in resource monitoring environments.

13. As to claim 10, see finding 10.5.

14. As to claim 11, see findings 10.6 and 10.9.

15. As to claim 12, see finding 10.7.

¹ Philips Semiconductors, "Universal Serial Bus Standard", May 1996, pg.7.

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Allowable Subject Matter

16. Claims 3-4, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: the claims are allowable because none of the references, either alone or in combination discloses or renders obvious a bus-powered device with a circuit for pulling-back the potential of a data transfer conductor from one of the power supply conductors with the specific composition and configuration as described in the designated claims.

Response to Arguments

18. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Rothenbaum, U.S. Patent 6128743, disclosed an invention to switch a USB hub between bus-powered and self-powered mode.
- Larky et. al, U.S. Patent 6105097, disclosed an invention to interconnect USB's and provide power management amongst them.
- Sartore et. al., U.S. Patent 6012103, disclosed an invention to reconfigure a USB peripheral device based on manufacturing specifications.

- Flannery, U.S. Patent 5799196, disclosed an invention to provide power management with USB self-powered devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (703) 305-8580. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (703) 308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tse Chen
May 17, 2004


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